## Above-average snowfall affects valley groundwater

The Ravalli County Environmental Health Department is about a month into its seasonal groundwater monitoring, and already we're seeing some interesting trends.

Each year, beginning in March, our department measures groundwater levels on private parcels all over the valley to determine if a site is suitable for a septic system. Whether or not a site gets monitored is determined by a sanitarian, usually during a site evaluation.

Sites are monitored if the sanitarian observes groundwater, wetland vegetation or irrigation, or sees evidence of seasonally high groundwater, such as soil mottling. Groundwater monitoring is done from March through October and helps determine the level of the groundwater in a specific area. If groundwater is too high (less than six feet from the surface), there's a danger of effluent leaching into the water table.

### 2007 Season

Last year, which was a dry year on average, the department monitored 313 test pipes in 80 locations throughout the county. Of those, about a third (34 per cent) of the pipes failed, meaning the water table came within four feet of the surface.

About 10 per cent of the pipes had water come between 48 and 60 inches of the surface, which means a septic system could be installed, but only with an engineered sand mound drain field.

Another 10 percent of the pipes saw water between 61 and 71 inches of the surface. These sites could have a septic system with a shallow-trench (less than 24-inch deep) drain field.

The rest of the pipes (45 per cent) had water at or below 72 inches, which means they could have a standard, conventional 24- to 36-inch-deep drain field. About 35 per cent of the 300 or so pipes remained dry during the entire monitoring season.

Because of the warmer-than-average weather last year, spring runoff was in full swing by the time monitoring had begun. Not surprisingly, the first pipes to show high water were on the west side of the valley where creeks and ditches were swollen.

It wasn't until mid-summer, when irrigation was in full force, that pipes on the east side of the valley began reaching their peak.

### 2008 Season

This year, we're monitoring about 210 pipes on 82 different parcels, and already we're seeing the results of last winter's above-average precipitation. Eighteen pipes failed during the first two weeks of monitoring, including pipes on both the east and west sides of the valley. Last year at this time, only one pipe had failed and it was on the west side in an area clearly influenced by spring run-off.

The high groundwater we saw in early March was due to snowmelt, and in almost every case, nearby irrigation ditches weren't even running yet. Accordingly, in the last two weeks, almost all the groundwater in the valley has gone down – anywhere from a couple inches to a couple feet – since most of the valley snow has melted.

Since spring run-off has barely begun, we expect to see a second peak in groundwater in the next month or two on the west side of the valley. Likewise, once the big irrigation canals on the east side are running, we should see similar rising groundwater on the east side of the valley.

**Why worry about high groundwater?**

All occupied buildings in Ravalli County, including dwellings and residences, must have an approved means of wastewater treatment. And because the Bitterroot Valley watershed currently houses more than 40,000 people, 15,000 septic systems and about 16,000 wells, keeping human effluent from leaching into the valley's single source of drinking water is of paramount importance.

Guidelines designed to protect our groundwater can be found in the Ravalli County Subsurface Wastewater Treatment and Disposal Regulations, and it's the job of the County's Environmental Health Department to administer and enforce these regulations.

Available on our Website -- www.ravallicounty.mt.gov/environmental/documents/septic.pdf -- these regulations are applicable throughout the county, and we recommend people refer to them when they have questions about wastewater treatment.

*In order to help citizens understand more clearly many of the environmental health issues in Ravalli County and the role of the Environmental Health Department in addressing these issues, our department will run a series of weekly newspaper articles titled "Environmental Health Talk."*

*In this ongoing series we hope to help raise the community's awareness of issues such as air and water quality and give readers useful tips on topics like recycling, collecting and disposing of hazardous materials and maintaining septic systems, just to name a few. To this end, we welcome pubic comment. If there's an environmental health issue you'd like us to address, write call or email the department: RCEH, c/o "EnviroHealth Talk," 215 South 4th St, Suite D, Hamilton MT 59840. Phone: 375-6571. Email: rdaniel@ravallicounty.mt.gov*